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No. 28

JUNEAU, ALASKA

Preliminary Western Redcedar Cubic Form Class Volume Tables for Southeast Alaska

Increased utilization of western redcedar and the requirements of the Forest Survey have made cubic foot volume tables for this species necessary. In Southeast Alaska there is apparently considerable variation in the form of cedar. When growing in association with hemlock (C-H type) it has much better form than in stands composed predominantly of cedar. There is, however, considerable variation within stands and until more tree measurements can be obtained it seems desirable to base volume tables on form class (Girard)^{1/} as well as diameter and number of logs.

Western redcedar tree measurements collected in 1954 by the Alaska Forest Research Center indicated that the cubic form class tables issued in 1950^{2/} do not fit western redcedar. These tables were adjusted on the basis of 41 cedar measurements. Actual volumes of the trees were plotted as a dependent variable and tabular volumes read from the cubic form class tables. The relation was found to be linear or near linear. The regression line is a graphical representation of the formula $y = a + bx$ where the constant $a = -1.24$, $b = 1.0684$, and $x =$ volume from tables to be adjusted. The attached cubic foot volume tables for western redcedar were obtained by applying this formula to the 1950 tables.

The aggregate difference of the test trees from the resulting cedar cubic foot volume tables is ± 0.6 percent, and the average deviation is 7.7 percent.

The average percentage reduction in volume for a utilized top instead of a 6-inch top is given in the table below by DBH classes.

DBH	Percentage reduction from volumes to 6" top to obtain cubic foot volume to average utilized top.
11.0 - 20.9	4
21.0 - 30.9	6
31.0 - 40.9	8
41.0 and above	10

1/ Diameter inside bark at top of first 16-foot log, divided by diameter breast high outside bark.

2/ Taylor, R. F. 1950. Cubic form class volume tables for Southeast Alaska, Alaska Forest Research Center Tech. Notes No. 6.

May 1955

H. E. Andersen

Western Redcedar

Tree diameter (inches)	Gross cubic foot volume, inside bark					
	Number of 16-foot logs to 6-inch top					
	1	2	3	4	5	6
8	5					
10	7	8	12	15	21	
12	8	12	16	21	26	
14	12	16	21	26	33	
16	15	20	25	32	40	
18	20	25	32	40	48	
20	25	32	39	49	57	
22		40	49	59	70	
24			59	70	84	
26				82	99	
28				95	114	
30				110	128	151
32					147	171
34					164	192
36					180	212
38					198	232
40					219	256
42					239	276
44					264	298

Western Redcedar

Tree diameter (inches)	Gross cubic foot volume, inside bark					
	Number of 16-foot logs to 6-inch top					
	1	2	3	4	5	6
8	5					
10	7	9	13	16	21	26
12	9	13	16	21	27	34
14	13	16	21	27	34	42
16	16	20	26	33	42	49
18	20	26	33	42	49	61
20	26	33	40	50	59	74
22		42	50	61	72	90
24			61	72	86	107
26				84	102	123
28				98	117	140
30				113	132	156
32					151	177
34					169	198
36					185	218
38					205	240
40					226	264
42					247	285
44					273	307
46						335

Western Redcedar

[illegible]

Western Redcedar

[illegible]

Form Class 74

Western Redcedar

[illegible]

Form Class 78

Western Redcedar

[illegible]

Western Redcedar

[illegible]

Western Redcedar

Tree diameter (inches)	Gross cubic foot volume, inside bark							
	Number of 16-foot logs to 6-inch top							
	1	2	3	4	5	6	7	8
8	8							
10	10	13	18	23	31	38		
12	14	18	23	31	39	49		
14	18	23	31	39	49	59		
16	22	31	38	48	59	71	92	
18	29	38	48	59	71	87	111	137
20	38	48	58	72	86	107	132	158
22		60	72	87	104	130	159	184
24			87	104	125	155	184	215
26				123	147	178	211	244
28				142	169	202	242	277
30				165	190	226	270	310
32					219	256	300	346
34					244	286	334	381
36					268	316	369	418
38					297	346	406	459
40					327	381	441	488
42					358	411	489	549
44					394	443	519	591
46						484	561	633
48						519	597	680
50							633	728
52							680	777
54							728	836
56							777	884
58							830	933
60							884	988

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